OBONGI DISTRICT PRIMARY SCHOOLS' ACADEMIC COMMITTEE

PRIMARY SEVEN PRE-P.L.E ASSESSMENT 2024
MATHEMATICS
TIME ALLOWED: 2HOURS 30MINS

EMIS NUMBER						PERSONAL NO.		

Index No.

Candidate's Name..... Tr. Daniel .....

Candidate's Signature:.....

School Name:..... Marking Guide .....

District:.....

Read the following instructions carefully

1. This paper has Two Sections **A** and **B**
2. **Section A,** has **20** short answer questions **(40marks)** and **Section B** has **12** questions **(60marks)**
3. All the working **MUST** be shown in the space provided
4. All working **MUST** be done using a **blue or black ball – point Pen** or **fountain Pen.** Diagrams should be drawn in **pencil**
5. **No calculators** are allowed in the examination room.
6. Unnecessary changes of work lead to loss of marks.
7. Any handwriting that cannot easily be read may lead to loss of marks
8. Do not fill anything in the box indicated **"FOR EXAMINERS' USE ONLY"** and those inside the questions paper.

FOR EXAMINER'S USE ONLY		
Qn. No	**Marks**	**EXRS' NO.**
1-5		
6-10		
11-15		
16-20		
21-22		
23-24		
25-26		
27-28		
29-30		
31-32		
TOTAL		

Turn Over

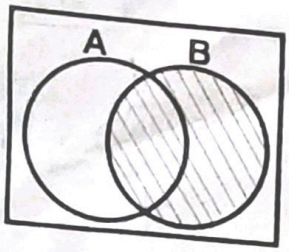
SECTION A (40 MARKS)

1. Work out: (2marks)

$$\begin{array}{r} 5\ \ 8 \\ -\ 3\ \ 6 \\ \hline 2\ \ 2 \end{array}$$

8 − 6 = 2
5 − 3 = 2

2. In the venn diagram below shade B (2marks)



3. In an examination conducted a pupil obtained $\frac{1}{4}$ in mathematics and $\frac{3}{5}$ in English. Express the total in percentage. (2marks)

Soln

Total fraction $= \frac{1}{4} + \frac{3}{5}$

$= \frac{5+12}{20}$

$= \frac{17}{20}$

As percentage

$= \frac{17}{20} \times 100\%$

$= 17 \times 5\%$

$= 85\%$

4. Given that a=⁻6, b=2 and c=⁻3. Find a+b-c. (2 marks)

Soln

$a+b-c = -6+2-(-3)$

$= -6+2+3$

$= -6+5$

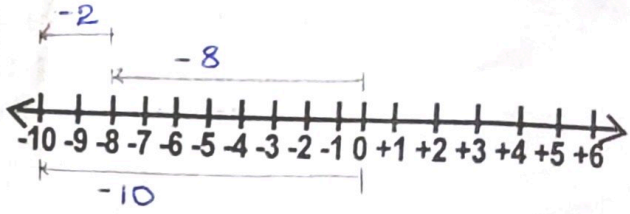
Neg = + + + + + −

Pos = + + + + +

−6 + 5 = −1

∴ a+b−c = −1

5. Work out: -8 + -2 using number line below. (2marks)



∴ −8 + −2 = −10

6. Write **0.0032** in standard form. (2marks)

Soln

Axiom

0·0032 × 10 = 00·032

00·032 × 10 = 000·32

000·32 × 10 = 3·2

$= 3.2 \times 10^{-3}$

$\therefore 0.0032 \approx 3.2 \times 10^{-3}$

$\therefore 0.0032 \approx 3.2 \times 10^{-3}$

7. Work out: $223_{four} + 13_{four}$. (2 marks)

Soln

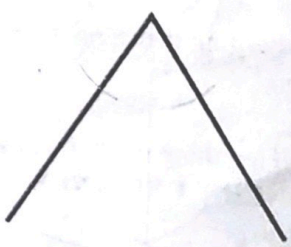
$$\begin{array}{r} {}^{1}2\,{}^{1}2\,3_{four} \\ +\quad 1\,3_{four} \\ \hline 3\,0\,2_{four} \end{array}$$

$\therefore 223_{four} + 13_{four} = 302_{four}$

6 ÷ 4 = 1 r 2

4 ÷ 4 = 1 r 0

8. Using a pair of compasses, ruler and pencil only bisect the angle below. (2marks)



9. Study the table below and answer the question

Pupil	Juma	Ali	Sam	Joel	Omar
Height	1.75m	2.00m	1.60m	2.30m	1.90m

Calculate the average height of Ali and Joel. (2marks)

Soln

Ali = 2.00M

Joel = 2.30M

$Av = \frac{(2.00 + 2.30)m}{2}$

$= \frac{4.30m}{2}$

= 2.15M

∴ Average = 2.15M

s/w

2.15

2 | 4.30

10. Solve: $4y^2 = 256$. (2marks)

Soln

$\frac{4y^2}{4} = \frac{256}{4}$

$\sqrt{y^2} = \sqrt{64}$

$y = 8$

∴ y = 8

11. Express 10m/s to km/hr. (2marks)

Soln

$\left(\frac{\text{Given m/s}}{1000} \times 3600\right)$ km/hr

$\left(\frac{10}{1000} \times 3600\right)$ km/hr

= 1 × 36 km/hr

= 36 km/hr

12. Fill in the next number in the sequences. (2marks)

43, 41, 37, 31, 23

-2 -4 -6 -8

2

31

- 8

23

13. Given that set K={1,3,5,7,9} and set L=(first five counting numbers). Find n(KnL). (2marks)

Soln

K = {1, 3, 5, 7, 9}

L = {1, 2, 3, 4, 5}

KnL = {1, 3, 5}

n(KnL) = 3

∴ n(KnL) = 3

14. In a class of 60 learners, $\frac{2}{3}$ of them got Div 1 and the rest got Div II. Find the fraction of learners in Div II. (2marks)

Soln

Total fraction = $\frac{3}{3}$

Div I = $\frac{2}{3}$

Div II = $\frac{3}{3} - \frac{2}{3}$

$= \frac{3-2}{3}$

$= \frac{1}{3}$

∴ Div II = $\frac{1}{3}$

OR

No of Div I = $\frac{2}{3} \times 60$ learners

= 2 × 20

= 40 learners

No of Div II = (60 - 40) learners

= 20 learners

fraction for Div II = $\frac{20}{60} = \frac{1}{3}$

∴ Div II = $\frac{1}{3}$

15. A dice is tossed once, what is the probability of a prime number showing up? (2marks)

Soln

$Prob = \frac{n(E)}{n(S)}$

$S = \{1, 2, 3, 4, 5, 6\}$

$n(S) = 6$

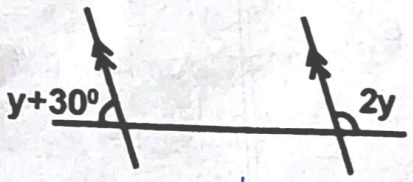
$E = \{2, 3, 5\}$

$\therefore n(E) = 3$

$\therefore Prob = \frac{3}{6}$

$\therefore Prob = \frac{3}{6}$

16. Find the value of **y.** (2marks)



Soln

$y + 30° + 2y = 180°$

$y + 2y + 30° = 180°$

$3y + 30° = 180°$

$3y + 30° - 30° = 180° - 30°$

$3y = 150°$

$\frac{3y}{3} = \frac{150°}{3}$

$y = 50°$

$\therefore y = 50°$

17. Daniela went to Keguru market and bought 0.75kg of meat. How many grammes of meat did she buy? (2marks)

Soln

From Kg to g

1Kg = 1000g

$0.75Kg = \frac{0.75Kg}{1Kg} \times 1000g$

$= \frac{75}{100} \times 1000g$

$= 75 \times 10g$

$= 750g$

∴ she bought 750g of Meat

18. Opio withdrew a bundle of bank notes numbered consecutively from CK00381 to CK00400. How many bank notes did he get? (2marks)

Soln

No of notes = (Last - First) + 1

= (CK00400 - CK00381) + 1

= CK00400
- CK00381

19

= (19 + 1) notes

= 20 notes

∴ He got 20 notes

19. Write "one million, one thousand one" in figures. (2marks)

Soln

One Million = 1000000

one thousand = 1000

one = 1

sum = 1,000,000
+ 1,000
+ 1

1,001,001

∴ One Million, one thousand one = 1,001,001

20. If $32_n = 17_{ten}$. Find the value of **n.** (2marks)

Soln

$32_n = 17_{ten}$

$(3 \times n^1) + (2 \times n^0) = 17$

$3 \times n + 2 \times 1 = 17$

$3n + 2 = 17$

$3n + 2 - 2 = 17 - 2$

$\frac{3n}{3} = \frac{15}{3}$

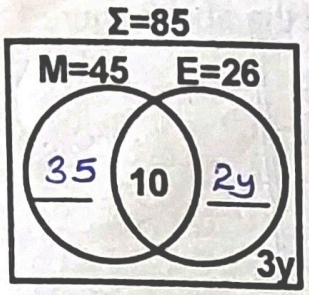
$n = 5$

$\therefore n = 5$

SECTION B

21. In a class of 85 pupils, 45 like mathematics (M), 26 like English (E), 10 pupils like both mathematics and English. 2y pupils like English only while 3y like neither of the two subjects.

(a) Complete the venn diagram below.



n(M)only = 45 − 10
= 35 pupils

(b) If **16** pupils like only English. Find the value of **y**.

Soln

Value of y.

$\frac{2y}{2} = \frac{16^{8}}{2}$

y = 8

∴ y = 8

(c) Find the number of pupils who did not like any of the two subjects.

Soln

n(M∪E)′ = 3y
= 3 × y
= 3 × 8
= 24

∴ 24 pupils did not like any of the two subjects

22. Given that $a=\frac{2}{3}$, $b=\frac{1}{3}$ and $c=\frac{2}{4}$.

Find the value of:

(a) 20c

Soln

$20c = 20 \times c$
$= \overset{5}{\cancel{20}} \times \frac{2}{\cancel{4}}$
$= 5 \times 2$
$= 10$

∴ 20c = 10

(b) $\frac{a}{b}$

Soln

$\frac{a}{b} = a \div b$
$= \frac{2}{3} \div \frac{1}{3}$
$= \frac{2}{\cancel{3}} \times \frac{\cancel{3}^{1}}{1}$
$= \frac{2 \times 1}{1 \times 1}$
$= \frac{2}{1}$

∴ $\frac{a}{b} = 2$

(c) cb

Soln

cb = c × b
$= \frac{2}{4} \times \frac{1}{3}$
$= \frac{2 \times 1}{4 \times 3}$
$= \frac{\cancel{2}^{1}}{\cancel{12}_{6}}$
$= \frac{1}{6}$

∴ cb = $\frac{1}{6}$

23. Mutesa went to the bank and got a bundle of bank notes numbered consecutively from MD1367000 to MD1367299.

(a) How many bank notes did he get?

Soln

No of notes = (Last − First) + 1
= (MD1367299 − MD1367000) + 1
= (299 + 1) notes
= 300 notes.

∴ He got 300 bank notes

(b) If the value for each note is sh.20,000. How much money did he withdraw from the bank?

Soln

sh.20,000 × 300
sh.20000 × 300
= sh.6,000,000

∴ He withdrew sh.6,000,000 from the bank.

24. Ajule borrowed some money from a parish development modal sacco at an interest rate of 10% per annum.
At the end of 3 years, she paid a total amount of sh.1,300,000.
(a) How much money did she borrow from the PDM sacco?

Soln

$I = P \times T \times R$

But $I = A - P$

$I = sh.1300000 - P$

$\therefore sh.1300000 - P = P \times 3 \times \frac{10}{100}$

$sh.1300000 - P = \frac{3P}{10}$

$10(sh.1300000 - P) = 3P$

$sh.13000000 - 10P = 3P$

$\therefore 3P = sh.13000000 - 10P$

$3P + 10P = sh.13000000$

$\frac{13P}{13} = \frac{sh.13000000}{13}$

$P = sh.1,000,000$

$\therefore$ she borrowed sh.1,000,000

(b) How much interest did she pay?

Soln

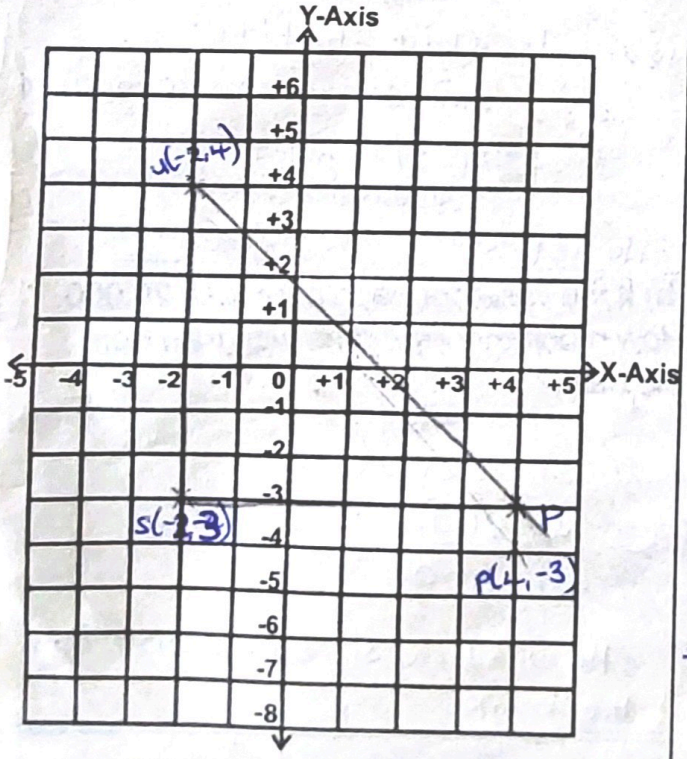
$I = sh.1300000 - P$

$= sh.1300000 - sh.1000000$

$= sh.300,000$

$\therefore I = sh.300,000$

25. (a) Plot the following coordinates on the grid below.
U(-2,+4), S(-2,-3) and P(+4, -3)



(b) Name the figure formed.

$\therefore$ Triangle

(c) Calculate the area of the above figure formed.

Soln

$A = \frac{1}{2} \times b \times h.$

$= \frac{1}{2} \times 6 \times 7$

$= (3 \times 7) sq.units$

$= 21 sq.units$

$\therefore A = 21 sq.units$

26. Kebita, Joy and Halima shared some money in the ratio 7:3:2, respectively.
If Kebita got sh. sh.100,000 more than Hamlima.
(a) How much money did they share altogether?

Soln

Kebita : Joy : Halima
7 : 3 : 2

Total share = 7+3+2
= 12

Difference = 7-2
= 5

Let the amount be d.

$\frac{5}{12}$ of d = sh.100,000

$\frac{5}{12} \times d = sh.100,000$

$\frac{5d}{12} = sh.100,000$

$\frac{12 \times 5d}{12} = sh.100,000 \times 12$

$\frac{5d}{5} = \frac{sh.1200,000}{5}$ (240,000)

$d = sh.240,000$

$\therefore$ They shared sh.240,000

(b) What amount did Joy get?

Soln

Joy = 3

$= \frac{3}{12} \times sh.240,000$ (20000)

$= 3 \times sh.20,000$

$= sh.60,000$

$\therefore$ Joy got sh.60,000

(c) Express the amount of money received by Halima as a percentage of the amount share by the three people.

Soln

Halima = $\frac{2}{12} \times$ sh. 240000

$= 2 \times$ sh. 20000

$=$ sh. 40,000

$\therefore \frac{\text{sh. } 40000}{\text{sh. } 240000} \times 100\%$

$= 4 \times 5\%$

$= 20\%$

$\frac{\text{sh. } 40000}{\text{sh. } 240000} \times 100\%$

$\frac{24}{6} \times 100\%$

$= 2 \times 25\%$

$= \frac{50}{3}\%$

$= 16\frac{2}{3}\%$

27.(a) Find the square of 25.

Soln

Square of $25 = 25^2$

$= 25 \times 25$

$= 25 \times 25$

125

$+ 50$

625

$\therefore$ Square of 25 = 625

(b) Find the square root of 7 1/9

Soln

Square root of $7\frac{1}{9} = \sqrt{7\frac{1}{9}}$

$= \sqrt{\frac{(7 \times 9) + 1}{9}}$

$= \sqrt{\frac{64}{9}}$

$= \sqrt{\frac{(2 \times 2) \times (2 \times 2) \times (2 \times 2)}{(3 \times 3)}}$

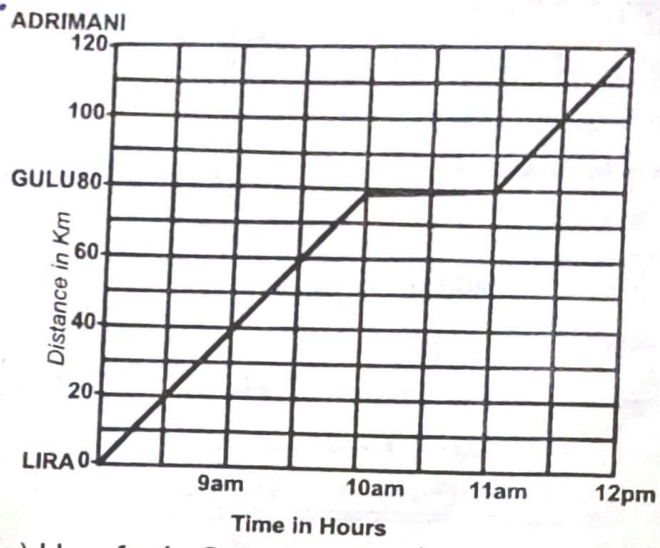
$= \frac{2 \times 2 \times 2}{3}$

$= \frac{8}{3}$

$\therefore$ The square root of $7\frac{1}{9} = 2\frac{2}{3}$

2	64
2	32
2	16
2	8
2	4
2	2
	1

28. The graph below represents the distance travelled and the time taken by Mr. Okopa from Lira to Adjumani. Study it carefully and answer questions that follow.



(a) How far is Gulu from Lira?

Soln

= 80Km

(b) How long did he rest at Gulu?

Soln

He rested for an hour

(c) Find his average speed fro the whole journey.

Soln

Av. S $= \frac{D}{T}$

$= \frac{120\text{km}}{4\text{ hrs}}$

$= 30\text{km/hr}$

$\therefore$ Av. speed = 30km/hr

29. (a) If $22_n = 14_{six}$.
Find the value of base **n**.

Soln

$22_n = 14_{six}$

$(2\times n^1)+(2\times n^0) = (1\times 6^1)+(4\times 6^0)$

$2\times n + 2\times 1 = 1\times 6 + 4\times 1$

$2n + 2 = 6 + 4$

$2n + 2 = 10$

$2n + 2 - 2 = 10 - 2$

$\frac{2n}{2} = \frac{8}{2}^4$

$n = 4$

$\therefore n = 4$

(b) Write **2463** in expanded from.

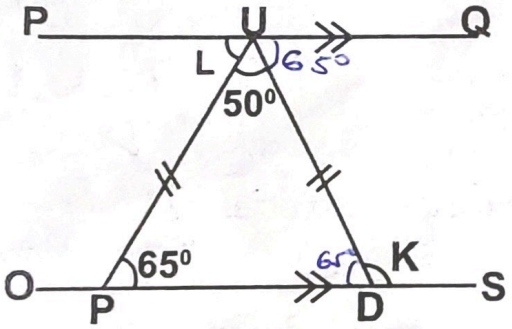
Soln

$2463 = (2\times 10^3)+(4\times 10^2)+(6\times 10^1)+(3\times 10^0)$

$= 2\times 1000 + 4\times 100 + 6\times 10 + 3\times 1$

$= 2000 + 400 + 60 + 3$

30. Given that line **PQ** is parallel to line **OS**, angle **UPD=65°**. Study it carefully and use it to answer questions that follow.



(a) Find the size of angle **K** in degrees.

Soln

$\angle K = 50° + 65°$

$\angle K = 115°$

$\therefore \angle K = 115°$

OR

$K + 65° = 180°$

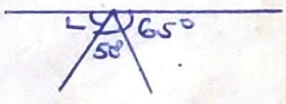
$K + 65° - 65° = 180° - 65°$

$K = 115°$

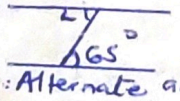
$\therefore \angle K = 115°$

(b) Find the size of angle **L**.

Soln



OR.



: Alternate angles

$\angle L = 65°$

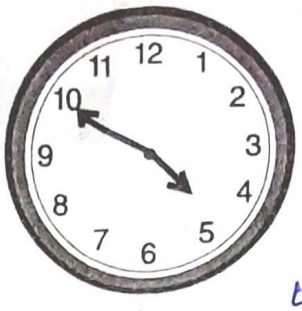
~~$\angle L + 65$~~ $\angle L + 50° + 65° = 180°$

$\angle L + 115° = 180°$

$\angle L + 115° - 115° = 180° - 115°$

$\angle L = 65°$

31. (a) What is the afternoon time shown on the clock face below?



It is 10 minutes to 5pm

4:50pm

(b) A motorist covered a distance of 150km in 1½ hours. Calculate his average speed.

Soln

$D = 150km$

$T = 1\frac{1}{2}hr$

$S = ??$

From $S = \frac{D}{T}$

$S = \frac{150Km}{1\frac{1}{2}hr}$

$= (150 \div 1\frac{1}{2})Km/hr$

$= (150 \div \frac{3}{2})Km/hr$

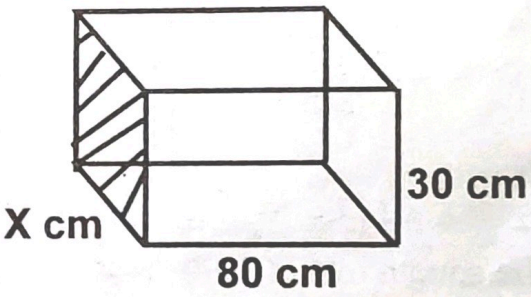
$= (\overset{50}{\cancel{150}} \times \frac{2}{\cancel{3}_1})Km/hr$

$= 50\times 2 km/hr$

$= 100km/hr$

$\therefore S = 100km/hr$

32. In Oli primary school a rectangular tank full of water measures **80 cm** by **X cm** and **30cm** as shown below.



(a) If the tank has a volume of **48000cm³**. Find the value of **X**.

Soln

$V = L\times W\times H$

$48000cm^3 = 80cm\times 30cm\times X cm$

$48000cm^3 = 2400cm^2\times X cm$

$\frac{48000cm^3}{2400cm^2} = \frac{2400cm^2\times X cm}{2400cm^2}$

$X cm = 20cm$

$X = 20cm$

$\therefore X = 20$

$\therefore x = 20$

(b) Calculate the area of the shaded part.

Soln

$A = H\times W$

$= 30cm\times 20cm$

$= 600cm^2$

$\therefore A = 600cm^2$

END